Discovery

Evaluating urban service delivery in Lagos State Nigeria: A bid to enhance sustainable waste management

Author Affiliation:
¹Department of Environmental Planning, Faculty of Environment
and Natural Sciences, Brandenburgische Technische Universität,
Germany
²Department of Environmental Planning, Faculty of Environmental
Health and Safety, Amazon Vz Berlin Brandenburg, Germany
³Department of Power Engineering, Environment Planning, Faculty
of Environment and Natural Sciences, and Mechanical Engineering,
Electrical and Energy Systems, Brandenburgische Technische
Universität, Germany
⁴Department of Sociology of Technology and Environment,
Brandenburgische Technische Universität, Germany
⁵Department of Finance, Ambassador Crawford College of Business,
Kent State University, Ohio, USA

*Corresponding Author
Department of Finance, Ambassador Crawford College of Business,
Kent State University, Ohio,
USA
Email: ademolaadegoroye191@gmail.com

ORCID List
Oladosu Olayinka Amos	0009-0008-5886-2945
Olodo Abdulrahamon Abiodun	0009-0001-9587-5728
Oloruntoba Emmanuel Olalekan	0009-0007-4093-9513
OIuwaseun Tolulope Opeodu	0009-0009-8355-6349
Adegoroye Ademola	0000-0003-0549-6773

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ABSTRACT

Sustainable waste management in urban areas is among the fundamental challenges that face several urban areas both in developing and developed countries. As a result of the rapid growth in population in urban areas, the improved lifestyle and innovation and invention in the technological field, the generation of harmful waste from homesteads, and the expansion of both commercial and economic sectors, there is an ever-increasing intensity of waste in urban areas. Thus, this research study aimed at evaluating urban service delivery in Lagos State, Nigeria in a bid to enhance sustainable waste management. The research utilized qualitative research methods and relied on a literature review to examine and analyze findings from other researchers. The study utilized secondary data from online journals, websites, and articles on the research topic. It also utilized case study research methodology to examine urban service delivery in Lagos State Nigeria. The study concluded that governmental prioritizing, regional assistance, the judicial system, and the general public impacted Lagos City's waste disposal. The survey also discovered that while the waste disposal recommendations were mainly applied, growing waste output and disposal mechanisms required segregation of waste choices to promote simple sewage treatment. The municipality has not adopted a comprehensive collection and recycling plan, a treatment-based waste management approach, general populace cooperation initiatives, or legislation to address trash. The analysis found that trash control in Lagos city was primarily influenced by 9 laminated composites which relied on political goodwill, control of pollution and disposal, regional government handouts, relevant legislation, perception, market merchant company, and government meddling. Furthermore, the Municipality's sanitary landfill facilities appeared sluggish and prone to flaws, particularly in the residential sector. Finally, the municipality did not implement comprehensive sewage treatment, treatment, and general populace alliances. Mild execution of the standards was carried out.

1. INTRODUCTION

Disposal of solid waste has been a challenge since humanity began, and its inappropriate management has had numerous diverse impacts on the environment and human beings. Increased waste disposal can be a result of the fast population growth which has been experienced in many countries (Chukwuma and Anayo, 2020). Even so, this issue has been more severe in urban areas compared to rural regions. Across the world, it is approximated that 2.01 billion tons of municipal waste are generated every year and at least 35% of the total amount is not managed in an environmentally sustainable way. It is also approximated that each person produces at least 0.75 kilograms of solid waste each day (Nzeadibe and Ejike-Alieji, 2020). Due to the increased waste disposal effects on the environment and human beings, stakeholders need an urgent and concerted effort to find a possible solution to this issue provided the fact that it is projected that the global municipal waste would shut to 3.5 billion tones by 2050.

Developed countries generate 34% of the global municipal solid waste while developing countries are the leading producers. In several urban areas and municipalities, especially in developing countries like Nigeria, however, basic waste management infrastructure is performing poorly, in that, there is poor provision of municipal solid waste management services and in some cities, such municipal solid waste management infrastructural facilities are non-existent (Nzeadibe and Ejike-Alieji, 2020). For effective and efficient urban service delivery, the urban area management or municipalities should ensure that they seek support and funding from international donors to be able to put in place a well-designed waste management facility for managing waste or rehabilitating an existing one and even constructing an urban waste management infrastructure that meets international standards (Olukanni et al., 2020).

Several urban areas that are not able to attain such standards have been working with developed countries and other cities in designing and adapting urban infrastructure to local conditions to cushion self-reliance through enhanced revenue collection and in the long-term maintenance of such services (Makanjuola et al., 2021). They have also been seeking external assistance in creating strong local institutions that would play a critical role in the financing and management of such urban infrastructure, as well as in putting in place sound legal and regulatory grounds that play an effective role in governing their urban infrastructural facilities operation and advancement. Most developing cities in Nigeria, especially Lagos, are facing a population explosion which results in a surge in municipal solid waste generation. Hence, the cities are vulnerable to diverse effects issues on the water, land, air, and human health (Onamade et al., 2022a). It is, therefore, affecting the global sustainable development goals because various goals are linked to human health and water management (Dawodu et al., 2021).

Despite various policies on municipal solid waste management in Lagos, like recycling, reuse, treatment, and non-generation, waste management still faces several challenges. Even though there are laws and rules to govern and guide municipal solid waste management, inadequate compliance and shady policies have caused communities and cities to become inundated by their trash, thus compromising the environment and public health. It is clear in most developing nations that there is a lack of trash handling, inadequate resources, and weak judicial execution. Additionally, financial constraints, an absence of public awareness and education, a lack of organizational and technical aptitude, a shortage of appropriate acreage for dumping, and an absence of legislation will have all contributed to inefficient pollution control. Lagos State has grappled with handling municipal solid waste, notably within the region, especially in large municipalities and commercial areas, as well as in certain suburban buildings.

The aesthetics, ecology, and welfare of the people living in the afflicted area rises well as the desirability of some commercial endeavors, have all been significantly impacted by this. Although there has been collaboration with the business sector in one of the former Lagos disposal facilities, this is insufficient since other landfill concerns throughout the entire region have either not been adequately handled or comprehensive sewage treatment has not received much attention. Even though there have been several analyses on garbage management, Lagos State's strategy and consistent solid waste handling remains a mystery. To build a sustainable, reliable waste management system within the state, this inquiry aims to pinpoint the reasons behind subpar solid waste administration practices, evaluate the existing waste control system, and suggest potential contemporary techniques that may be used. It is against this background that the study evaluates the effectiveness of policies regarding municipal waste management in Lagos.

Despite various efforts by the Lagos State government of Lagos to enhance sustainable municipal solid waste management, there is still a lot that needs to be done because it has not worked (Onamade et al., 2022b). The municipal solid waste disposal in the city has been on the verge of increasing despite various policies established by the state regime through LAWMA. The diverse impacts of municipal waste disposal in Lagos have affected various SDG goals like good health and well-being and clean water and sanitation. Also, since Lagos is located in the country's coastal region, poor municipal solid waste management significantly affects the provision of clean water. Municipal waste disposal has also been done in the water bodies, threatening the supply of clean and safe water for human and household use. As a result, this research study primarily aims to answer the following research questions: What are the factors affecting municipal solid waste management in Lagos State? What are the current systems of disposing of municipal solid waste in Lagos State? What strategies of municipal solid waste management can be implemented in Lagos State?

2. RESEARCH METHODOLOGY

The research study covered the entire Lagos State Nigeria, which is a state in the southwestern part of Nigeria. This is one of the 36 states of Nigeria; it is the most populated and also the smallest one. This research paper primarily aims to evaluate urban service delivery in terms of municipal solid waste management. The main reason why Lagos State was chosen, and not any other state in Nigeria, is simply because just like any other growing city, Lagos is facing greater challenges when it comes to effective and sustainable waste management (Joseph et al., 2022). Contextually, different municipal solid wastes produced in the sub-city, such as commercial, institutional, and other non-hazardous wastes were not examined in the research area. The research study narrows down on domestic solid waste management in Lagos State Nigeria. Figure 1 illustrates a map of Lagos State Nigeria.
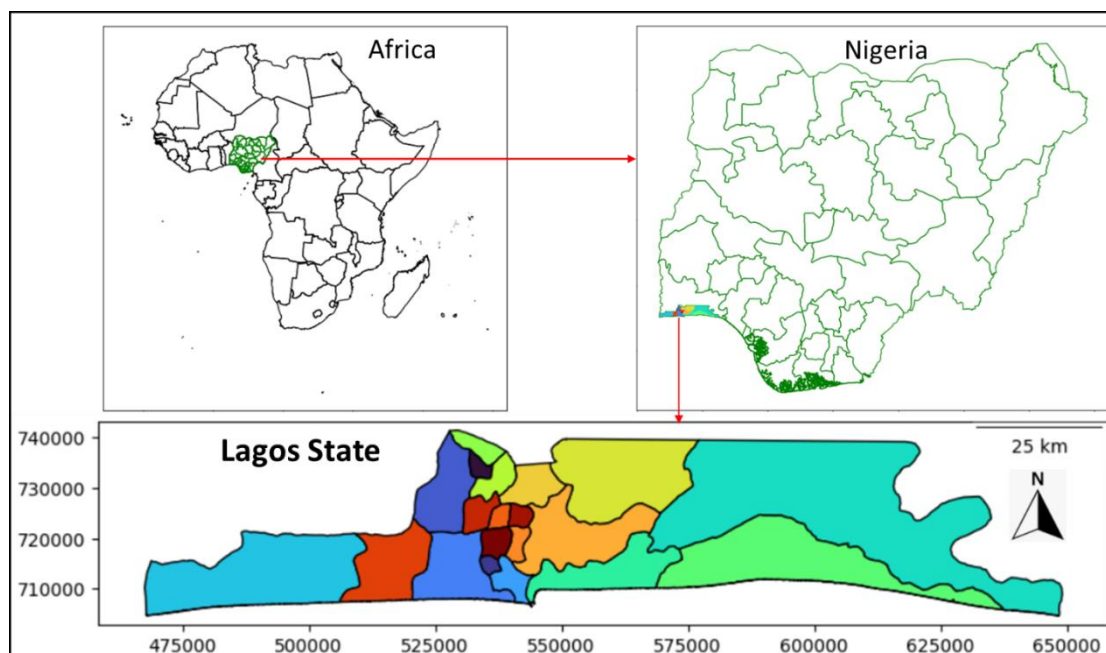
Figure 1 Map of Lagos State Nigeria (Author's work)

This research study utilized various methodologies in data collection that enhanced the qualitative research methods to ensure improved comprehensive collection and analysis of findings (Table 1). First, the research primarily depends on the literature review method, where previous research works were examined and analyzed to enhance comprehensive findings from other researchers. The literature review was based on online sources. Secondary data were accessed through online journals, articles, and corporate websites containing information about the research topic.

The study also utilizes a case study research methodology, which is an effective qualitative research method to examine urban service delivery in Lagos State Nigeria in a bid to enhance sustainable waste management comprehensively. This method relies on interviews/Questionnaires and observations to supplement the conclusion. Interviews/Questionnaires helped to engage Lagos residents

in participating in enhancing sustainable waste management and provide recommendations touching on various measures to make it successful. It also provides an effective way to get firsthand information from appropriate people or organizations. It helps to identify various measures that can be used to successfully manage waste in Lagos and improve the achievement of Nigeria's SDG goals.

Table 1 Research question, Datatype and Method

Research Question	Type of Data	Method
What are the factors affecting municipal solid waste management in Lagos State?	Qualitative Data	Questionnaire/Interviews
What are the current systems of disposing of municipal solid waste in Lagos State?	Qualitative Data	Questionnaire/Interviews
What strategies of municipal solid waste management can be implemented in Lagos State?	Qualitative Data	Questionnaire/Interviews

The study engaged 320 respondents but the research was able to gather 314 questionnaires, 278 from market merchants, and 36 from representatives from various groups, not all of them were filled out as intended. This was a reasonably representative sample of the population with a response rate of 98%.

3. RESULTS AND DISCUSSION

Results

Demographic Profiles of the Respondents

The age of the respondents (Figure 2) who took part in the survey was gathered by the study. This helped connect how age and the study's goals interacted. In this study, solid waste management and disposal practices could be compared by age to see whether there was something special about certain age groups and disposal practices. This would enable age to be considered when formulating related waste policies. According to the results, 30% of the participants were between the ages of 31 and 40. This is similar to the findings of (Adegoroye et al., 2021; Ogunyemi et al., 2022). Following this group of responders were two more groups, one between the ages of 21 and 30 (26%) and another between the ages of 41 and 50 (24%). According to the findings, most of the research participants were in their prime of life, and there were more children than adults and young people.
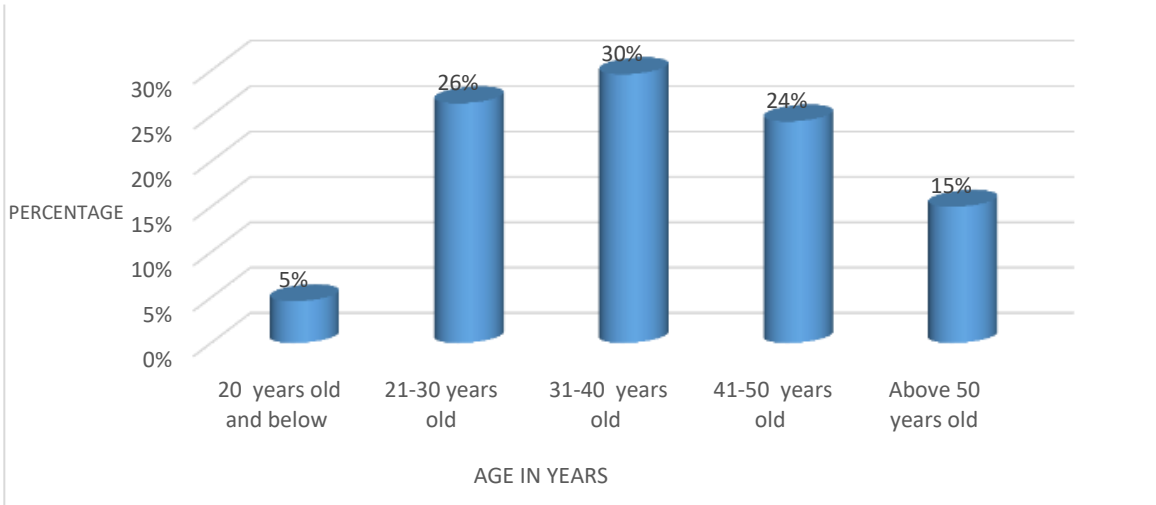

Figure 2 Age of the respondents (Author's field survey)

Over the years, gender representation and attention have become more important. There is a shift in the norm where more women are taking on roles that were once thought to be reserved for men. Figure 3 presents the findings. According to the survey, there were

52% more female respondents than male respondents. Given that the study concentrated on small company owners, it was extremely expected that there would be more women than men as most small-scale business owners selling fruits, vegetables, and other items were women.
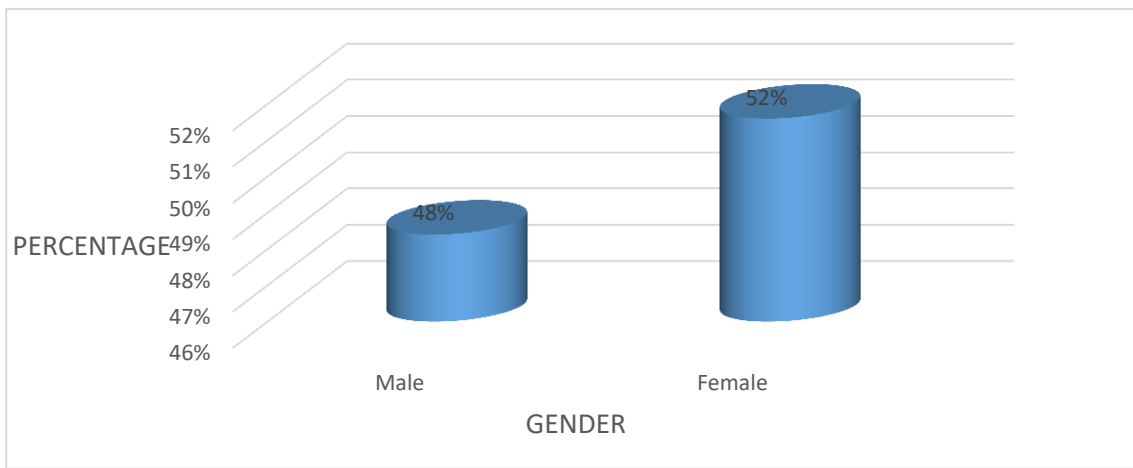
Figure 3 Gender of the respondents (Author's field survey)

The respondents' education level is a reliable indicator of their level of literacy. Figure 4's findings reveal that 37% of respondents did not provide specific information about their degree of schooling. This is presumably a result of the prejudice attached to having a poor degree of education. The majority (33%) of individuals who provided this information had completed secondary education, 15% had just completed elementary school, and 10% had attended a college to get a certificate or diploma. Only a negligible percentage (2%) of respondents had a college degree, indicating that the majority had only received their basic and secondary education. Badamosi et al., (2023) shared similar findings. The results may be construed to show that most respondents only completed elementary school, making them capable of comprehending when taught or given training on new methods of managing garbage.
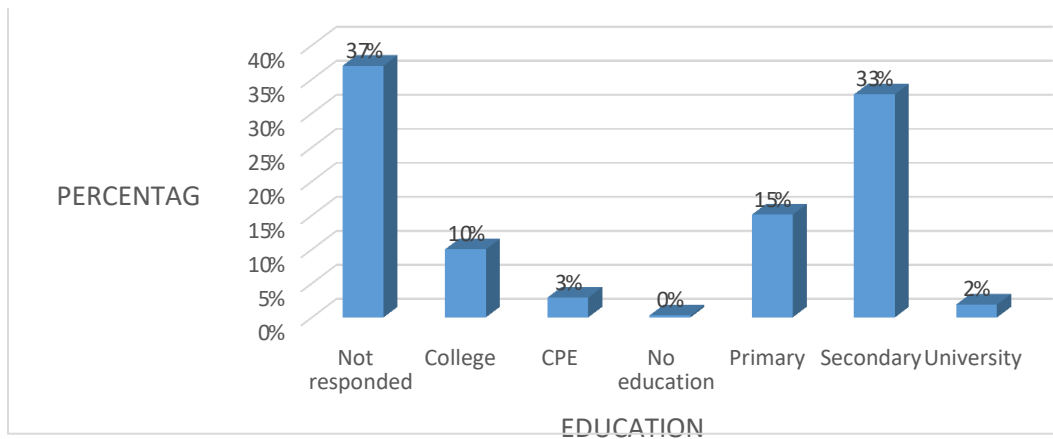
Figure 4 Education status of the respondents (Author's field survey)

The survey also discovered that although the respondent with the most formal education had spent 22 years, the respondent with the least formal education had only completed 5 years. Oluwalade et al., (2023a), Oluwalade et al., (2023b) also found out about 20 years of highest formal education. The average number of years the respondents spent in formal education was 11.08, suggesting a low level of education overall, as shown in (Table 2). As a result, the respondents' capacity to make well-informed decisions on waste management was poor.

Table 2 Number of years of formal education (Author's field survey)

	N	Min	Max	Mean	Std. Dev.	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Number of years of formal education:	295	5	22	11.08	3.351	.651	.142

As indicated in Table 3, the respondents supplied data on how frequently they disposed of waste on their property as well as how frequently garbage trucks picked up discarded waste. According to Table, many of the respondents to this survey (who worked in Lagos markets) disposed of rubbish three times per week, with 30% disposing of waste twice per week and 18% disposing of waste daily. This demonstrates that among the small enterprises represented in the study's sample, garbage disposal occurred rather often. Regarding the frequency of waste disposal, the study discovered that the majority (49%) of the wastes discarded by the respondents were collected daily by the garbage collection trucks, followed by 36% whose wastes were collected every two days, indicating that wastes were frequently collected by garbage collection trucks in the markets in Lagos city.

Table 3 Waste disposal and collection among the respondents (Author's field survey)

	Everyday	2 times a week	3 times a week	4 times a week	Others
The frequency with which respondents discard wastes	18%	30%	43%	2%	6%
The frequency with which garbage trucks collect discarded waste	49%	36%	5%	8%	2%

Factors Affecting Solid Waste Management in Lagos City

Examining the key elements influencing Lagos State solid waste management was the study's first goal. To accomplish this, a factor analysis was used to condense the 42 elements into a small number of synthesis aspects. The issues influencing the management of garbage in Lagos city markets are discussed in this section. A Likert scale with five points was used to gather the data. According to a scale of 1 (Strongly Disagree), 2, 3, 4, and 5, there is agreement (Table 4). The mean and standard deviation were used to examine the data. For analytical purposes, it was believed that mean values around 4.0 indicated "Agree", mean values near 3.0 represented "Neutral", and mean values near 2.0 represented "Disagree".

The degree of response variability was shown by using the standard deviation. Wide variability denotes a lack of agreement on a topic, whereas narrow variability suggests agreement. In this study, a score of less than 1.0 showed unanimity, whereas a value of greater than 1.0 suggested a lack of consensus (broad variability) (close variability). The initial factors on factor analysis were primarily formulated from the research questions and the objectives. However, some of the statements were also acquired from past research studies that aimed at testing similar variables as the current research study.

Table 4 Descriptive data on the variables influencing the management of solid waste in Lagos City (Author's field survey)

THE INITIAL FACTORS ON FACTOR ANALYSIS	N	MEAN	STD. DEV.
23. The existing legal framework on waste management within the market is strictly observed.	320	3.7622	1.31313
38. Proper laid down infrastructure for the solid waste collection.	320	3.6840	1.08819
33. Waste collectors are provided with uniforms for their health and safety.	320	3.6013	2.07195
35. The service of motor vehicles used for collection and discarding of waste is made on time.	320	3.4951	2.42316
17. Strict adherence to the existing laws in the management of waste within the market.	320	3.4020	1.15028
39. There is a properly laid down infrastructure for solid waste disposal.	320	3.3355	1.07928
30. Market vendors are willing to pay a fee to improve service delivery in waste management within the market.	320	3.2630	1.14956

22. There is slow enforcement of waste management strategies within the market.	320	3.1086	1.07079
37. Adequate space provided by the Lagos State government for the disposal of solid waste.	320	3.1039	1.20892
26. Policies to reduce solid waste discharge within the market are weak.	320	3.0658	1.08801
32. There is adequate machinery for collecting solid waste.	320	3.0197	1.02104
1. There is an awareness of the impact of waste on the environment.	320	2.9708	1.57209
24. Governance regulates solid waste management within the market.	320	2.9406	1.11719
18. There is a destitute approach to solid waste management.	320	2.9103	.82982
29. There is a fee charged for managing solid waste within the market.	320	2.9052	1.23905
21. There is slow implementation of waste management strategies within the market.	320	2.8000	1.16811
19. Poor State government approach in provision of the waste management services.	320	2.7961	1.14228
31. There are adequate tools for collecting solid waste.	320	2.7705	1.20298
9. There is ignorance regarding waste management within the market.	320	2.6678	1.34567
15. There is systematic controlled waste management through effective enforcement.	320	2.6405	1.41474
14. Systematic controlled waste management through effective county government enactments.	320	2.6020	1.47905
16. There is systematic controlled waste management through effective communication.	320	2.4542	1.38595
34. Waste collectors are provided with masks for their health and safety.	320	2.4495	1.15182
25. Management of SW is one of the political agendas in the state government.	320	2.3562	.99206
20. There is political interference in the management of waste.	320	2.3464	1.06706
42. There are incentives offered to organizations that engage in recycling.	320	2.2573	1.09764
40. There are incentives offered to organizations that engage in material recovery.	320	2.2378	1.01241
41. There are incentives offered to organizations that engage in the reuse of waste.	320	2.1954	1.00696
6. There is a non-formal education sensitizing the market vendors on waste management.	320	2.1013	1.13925
4. There is knowledge of how to recycle waste.	320	2.0658	1.18110
3. There is knowledge on how to reuse waste.	320	2.0165	1.16647
36. There are skilled staff and trained personnel who manage the waste within the market.	320	2.0033	.96168
2. There is knowledge on how to segregate waste.	320	1.9479	1.11021
27. There is the provision of adequate storage bins to individual vendors within the market before transferring to a common pit for collection.	320	1.8627	.99216
5. There has been formal education on how to manage waste among the vendors.	320	1.8409	1.03867
28. There is the provision of assorted bins to aid in waste separation during storage.	320	1.8371	1.00628
12. Prioritization by the political leaders in the management of waste within the markets.	320	1.7980	.93843

7. There are civic education programs that enlighten the market stakeholders.	320	1.7597	.91356
11. Participation of the public in awareness campaigns of the best ways to manage waste.	320	1.7394	.90596
10. The Lagos State Government organizes awareness campaigns of effective ways of managing waste.	320	1.7199	.87430
13. Goodwill from the political leaders in the management of waste within the markets.	320	1.7199	.88175
8. There are civic education programs that enlighten the general public on the health implications of indiscriminate dumping.	320	1.6961	.89211

The market vendors agreed (M=3.7622), based on the findings in Table 4, that the legislative framework on waste disposal at the time was carefully adhered to. However, a high degree of response variability was revealed by the standard deviation result (SD=1.31313). This indicates that there was still a reasonable percentage of market merchants who believed that the existing legal framework was not fully adhered to. The market sellers also concurred that the infrastructure for collecting solid garbage was well-designed and planned out (M=3.6840). There was no agreement among the market sellers because of the vast diversity of the replies, as indicated by the standard deviation of 1.08819. This was possibly caused by the fact that certain locations had infrastructure while others did not, or by the fact that some market merchants knew about the infrastructure while others did not and assumed there was none. Additionally, the findings demonstrate that market merchants agreed that garbage collectors needed uniforms for their health and safety (M=3.6013).

However, the large standard deviation (SD=2.07195) indicated a lack of agreement. As a result, several locations did not supply uniforms for the garbage collectors' protection. This can therefore make it harder for these people to do their jobs well. The survey also discovered other highly ranked waste management characteristics. These included the aspect of the market vendors' willingness to pay fees to improve waste management within the markets (M=3.2630, SD=1.14956), the timely maintenance of the motor vehicles used for waste collection and disposal (M=3.4951, SD=2.42316), strict adherence to the applicable laws in the management of waste within the market (M=3.4020, SD=1.15028), the presence of established infrastructure for waste disposal (M=3.3355, SD=1.07928), and the aspect of the market vendors'. The standard deviation values were all more than 1.0 notwithstanding the ratings, showing a high degree of variability and a lack of agreement among the market sellers. As a result, it implied that certain market sellers did not timely maintain their vehicles, did not adhere to the waste management rules in place, did not have an appropriate trash management infrastructure, and did not want to pay for waste management services.

The respondents, however, identified the least used aspects of waste management in Lagos markets, including a lack of civic education programs that inform the public about the health effects of indiscriminate dumping (M=1.6961, SD=0.89211), a lack of political leaders' support for the management of wastes in the markets (M=1.7199, SD=0.88175), and a lack of awareness-raising campaigns about efficient waste management methods (M=1.7199, SD=0.87430). The standard deviation values for each group are far below 1.0, suggesting that the market sellers agreed that the state government did not use any such waste management techniques. Factor analysis of the factors affecting waste management in Lagos State. In the Lagos State government, composite elements affecting the management of solid waste were extracted using factor analysis.

Component Factor Loadings

The component retrieved using PCA is displayed in the rotated component matrix. Nine components in all were recovered with eigenvalues greater than 1.0. Table 5 displays how the components and related variables are arranged.

The presence of control and recycling systems was identified as the top composite element influencing the management of solid waste in Lagos State. According to the data in Table 6, only 11% of respondents said that organizations that recycle waste receive enough incentives, and only 9% said they work to recover materials and reuse wastes, indicating that there aren't enough incentives to persuade individuals to reuse or recycle garbage. Regarding the control mechanism, 26% of the respondents said their state government's effective enactments provided systematic control over waste management, and 27% said the process was managed by the effective implementation of waste management legislation. Additionally, the waste was managed via good communication (22%). The

implementation of a charge for managing wastes (30%), properly constructed infrastructure for the disposal of solid waste (30%), and the supply of space for managing wastes (30%) were additional controls and collecting methods.

Table 5 Component Factor Loadings (Author's field survey)

	Component								
	1	2	3	4	5	6	7	8	9
There is an awareness of the impact of waste on the environment.	.273	.142	.665	.233	.216	-.061	-.144	.250	-.064
There is knowledge on how to segregate waste.	.197	.529	-.028	-.041	.528	-.258	.000	.211	-.016
There is knowledge on how to reuse waste.	.398	.131	.223	.182	.734	.064	.096	-.065	.052
There is knowledge on how to recycle waste.	.444	.242	.218	.229	.568	.120	.119	-.190	.035
There has been formal education on how to manage waste among the vendors.	.123	.474	-.049	-.035	.510	-.264	-.035	.302	-.121
There is a non-formal education sensitizing the market vendors on waste management.	.330	.321	.174	.159	.665	.069	-.109	.039	.144
There are civic education programs that enlighten the market stakeholders.	-.021	.464	.179	.051	.383	-.151	.153	.443	-.049
There are civic education programs that enlighten the general public on the health implications of indiscriminate dumping.	-.006	.701	.081	.030	.244	-.045	.028	-.004	.317
There is ignorance regarding waste management within the market.	-.225	-.364	-.565	-.287	-.170	.241	-.135	.062	.038
The Lagos State Government organizes awareness campaigns of effective ways of managing waste.	.006	.791	.000	.089	.051	-.091	-.111	-.172	-.083
There is the participation of the public in awareness campaigns of the best ways to manage waste.	-.075	.747	.148	.098	.058	.043	.007	.031	-.090
There is prioritization from the political leaders in the management of waste within the markets.	-.078	.775	.116	.012	.123	.019	.026	.046	.090
There is goodwill from the political leaders in the management of waste within the markets.	-.059	.787	.107	-.036	.142	.033	.230	.058	-.063
There is systematic controlled waste management through effective county government enactments.	.865	-.010	.101	.049	.010	-.118	.058	-.103	-.060
There is systematic controlled waste management through effective enforcement.	.840	.068	.056	.101	.110	-.054	-.006	-.074	-.102
There is systematic controlled waste management through effective communication.	.733	.010	.132	.307	.154	-.014	.150	-.154	.221
There is strict adherence to the existing laws in the management of waste within the market.	.114	.119	.076	.776	.133	-.061	-.114	.037	-.005
There is a destitute approach to solid waste management.	-.090	.010	-.250	.645	.134	-.030	.113	-.284	.268
There is a poor Lagos State government approach to the provision of the necessary waste management services.	-.089	-.094	-.819	-.113	.172	-.120	.039	.011	-.067

There is political interference in the management of waste.	.266	.068	-.178	-.014	-.009	-.140	.758	-.018	.122

Table 6 Composite factors affecting solid waste management in Lagos City (Author's field survey)

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	N	Mean	Std. Dev
Control and recycling								
There are incentives offered to organizations that engage in recycling.	28%	35%	26%	5%	6%	320	2.257	1.098
There are incentives offered to organizations that engage in material recovery.	25%	39%	27%	5%	4%	320	2.238	1.012
There are incentives offered to organizations that engage in the reuse of waste.	27%	38%	26%	5%	4%	320	2.195	1.007
There is a systematic controlled waste management through effective county government enactments.	26%	38%	10%	4%	22%	320	2.602	1.479
There is a systematic controlled waste management through effective enforcement.	23%	36%	14%	8%	19%	320	2.640	1.415
There is systematic controlled waste management through effective communication.	28%	37%	13%	5%	17%	320	2.454	1.386
There is a fee charged for managing solid waste within the market.	3%	52%	15%	10%	20%	320	2.905	1.2
There is a properly laid down infrastructure for the solid waste disposal.	6%	7%	58%	7%	23%	320	3.336	1.079
There is adequate space provided by the county government for the disposal of solid waste.	8%	23%	41%	7%	21%	320	3.104	1.209
The service of motor vehicles used for the collection and discarding of waste is made on time.	4%	6%	60%	9%	21%	320	3.495	2.423
There are adequate tools for collecting solid waste.	23%	8%	48%	12%	10%	320	2.771	1.203
The level of support from the state and political leadership								
The State Government organizes awareness campaigns of effective ways of managing waste.	47%	41%	9%	1%	3%	320	1.720	0.874
There is goodwill from the political leaders in the management of waste within the markets.	48%	38%	8%	4%	2%	320	1.720	0.882
There is prioritization from the political leaders in the management of waste	49%	27%	19%	3%	1%	320	1.798	0.938

within the markets.								
There is the participation of the public in awareness campaigns of the best ways to manage waste.	49%	36%	11%	3%	2%	320	1.739	0.905
There is provision of assorted bins to aid in waste separation during storage.	44%	40%	9%	2%	5%	320	1.837	1.006
There is provision of adequate storage bins for individual vendors within the market before transferring to a common pit for collection.	43%	38%	13%	2%	4%	320	1.863	0.992
There are civic education programs that enlighten the general public on the health implications of indiscriminate dumping.	50%	38%	8%	3%	2%	320	1.696	0.892
Skilled staff and trained personnel	29%	54%	6%	7%	0%	320	2.003	0.992
Negligence and ignorance of County government and the public								
There is an awareness of the impact of waste on the environment.	35%	4%	8%	37%	17%	320	2.971	1.572
There is adequate machinery for collecting solid waste.	6%	22%	48%	13%	12%	320	3.020	1.021
There is ignorance regarding waste management within the market.	21%	37%	9%	20%	13%	320	2.668	1.346
There is slow enforcement of waste management strategies within the market.	12%	8%	48%	24%	9%	320	3.109	1.071
There is a poor county government approach to the provision of the necessary waste management services.	11%	37%	20%	25%	7%	320	2.796	1.142
Slow implementation of waste management strategies within the market.	12%	38%	18%	25%	8%	320	2.800	1.268
Existing Legal Framework								
The existing legal framework on waste management in markets is strictly observed.	9%	7%	30%	10%	45%	320	3.762	1.313
Strict adherence to the existing laws in the management of waste within the market.	11%	5%	31%	38%	15%	320	3.402	1.150
Destitute approach in SWM	10%	6%	73%	7%	5 %	320	2.910	0.830
Proper laid down infrastructure SW collection.	7%	3%	29%	37%	24%	320	3.684	1.088
Governance regulates SWM in the markets.	7%	28%	43%	7%	15%	320	2.941	1.117
Level of Knowledge and awareness on waste management among the public								
Knowledge on how to re-use waste.	40%	38%	10%	4%	8%	320	2.017	1.166
Knowledge of how to recycle waste.	38%	38%	11%	6%	8%	320	2.066	1.181

There is a non-formal education sensitizing the market vendors on waste management.	37%	34%	16%	9%	5%	320	2.101	1.139
Knowledge of how to segregate waste.	43%	36%	10%	6%	5%	320	1.948	1.110
Formal education on how to manage waste	46%	37%	9%	4%	5%	320	1.841	1.039
Safety of the waste collectors							
Waste collectors are provided with masks for their health and safety	12.10%	3.30 %	17.6%	56.50%	10.50%	320	2.450	1.152
Waste collectors are provided with uniforms for their health and safety.	13.70%	56.4%	12.70%	5.90%	11.40%	320	3.601	2.072
Prioritization and Policy framework on waste disposal							
Management of SW is one of the political agendas in the state government.	16%	50%	22%	7%	5%	320	2.356	0.992
Policies to reduce solid waste discharge within the market are weak.	11%	13%	44%	23%	10 %	320	3.066	1.088
Cooperation and awareness of the market vendors							
The willingness of market vendors to manage and pay fees for waste collection management	13%	6.5%	32.5 %	37.3 %	10. 7%	320	3.263	1.149
Availability of civic programs to enlighten the masses and the market vendors on the health implications of indiscriminate dumping	46.4 %	39.0 %	9.1%	3.2%	2.3 %	320	1.696	0.892
Political interference							
Political interference in efforts geared toward the management of waste	15%	55.6%	15.4%	5.2%	8.2%	320	2.346	1.067

Additionally, 30% of respondents believed that waste vehicles in their markets received timely maintenance. About 22% of the respondents said their marketplaces had sufficient means for collecting solid garbage. The findings revealed a range of management techniques for solid wastes, including control and collection. Less than 40% of the market, it was reported, had the mechanisms in place. The level of political and administrative assistance from the Lagos State government executive affected garbage management in Lagos markets. The findings reveal some flaws in the political leadership and state government administration that may have had a significant impact on trash management. These include the state government's failure to create awareness programs about the best ways to manage waste (88%), the absence of political leaders' goodwill (86%), their failure to give waste management a high priority (76%), and the low level of public engagement in these efforts (85%).

The findings show that the state government administration and political leaders have little influence and little interest in managing waste properly. Another aspect that was shown to influence the management of trash in the markets within Lagos City was priority setting and policy formation on waste management. The findings show that the state administration only designated solid waste management as a political agenda item (66%). Additionally, according to most market merchants (33%), policies to prevent solid waste disposal within the markets were poor. The availability of civic programs to educate the general public and market vendors on waste management, political interference with efforts geared toward waste management, and the willingness of market vendors to manage and pay fees for waste collection and management were additional factors affecting the management of waste in Lagos State.

Principal Component Analysis (KMO and Bartlett's Test)

A maximum of 25 iterations of principal component analysis were performed in the investigation (Table 7). The iteration process used the Varimax approach. Through Bartlett's test, the study evaluated the sample's sphericity and suitability for sampling. This test was useful in testing whether the study's sample size was adequate to allow factor analysis to be carried out. The test indicated a chi-square of 8275 ($p<0.05$). This is an indication that the variables have a strong relationship with one another and therefore they could be used in forming components.

Table 7 KMO and Bartlett's Test (Author's field survey)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.781
Bartlett's Test of Sphericity	Approx. Chi-Square	8275.767
	def.	861
	Sig.	.000

Communalities of Factors Affecting Solid Waste Management

The commonalities demonstrate the worth of a factor's variation that is shared with other components (Table 8). The value of commonalities needs to be greater than 0.5 for factors to be kept. A commonality value of less than 0.5 qualified a variable as being eliminated.

Table 8 Communalities table of the factors affecting waste management in Lagos city (Author's field survey)

	Initial	Extraction
There is an awareness of the impact of waste on the environment.	1.00	.729
There is knowledge on how to segregate waste.	1.00	.710
There is knowledge on how to reuse waste.	1.00	.819
There is knowledge on how to recycle waste.	1.00	.746
There has been formal education on how to manage waste among the vendors.	1.00	.680
There is non-formal education sensitizing the market vendors on waste management.	1.00	.750
There are civic education programs that enlighten the market stakeholders.	1.00	.645
There are civic education programs that enlighten the general public on the health implications of indiscriminate dumping.	1.00	.667
There is ignorance regarding waste management within the market.	1.00	.695
The State Government organizes awareness campaigns of effective ways of managing waste.	1.00	.688
participation of the public in awareness campaigns of the best ways to manage waste.	1.00	.615
There is prioritization from the political leaders in the management of waste within the markets.	1.00	.645
There is goodwill from the political leaders in the management of waste within the markets.	1.00	.717
There is systematic controlled waste management through effective state government enactments.	1.00	.793
There is systematic controlled waste management through effective enforcement.	1.00	.753
There is systematic controlled waste management through effective communication.	1.00	.769
There is strict adherence to the existing laws in the management of waste within the market.	1.00	.668
There is a destitute approach to solid waste management.	1.00	.670
There is a poor state government approach to the provision of the necessary waste management services.	1.00	.751

There is political interference in the management of waste.	1.00	.727
There is slow implementation of waste management strategies within the market.	1.00	.810
There is slow enforcement of waste management strategies within the market.	1.00	.675
The existing legal framework on waste management within the market is strictly observed.	1.00	.798
Governance regulates solid waste management within the market.	1.00	.653
Management of solid waste is one of the political agendas in the county government.	1.00	.644
Policies to reduce solid waste discharge within the market are weak.	1.00	.601
There is provision of adequate storage bins for individual vendors within the market before transferring to a common pit for collection.	1.00	.627
There is provision of assorted bins to aid in waste separation during storage.	1.00	.618
There is a fee charged for managing solid waste within the market.	1.00	.722
The market vendors are willing to pay a fee to improve service delivery in waste management within the market.	1.00	.663
There are adequate tools for collecting solid waste.	1.00	.700
There is adequate machinery for collecting solid waste.	1.00	.540
Waste collectors are provided with uniforms for their health and safety.	1.00	.759
Waste collectors are provided with masks for their health and safety.	1.00	.796
The service of motor vehicles used for the collection and discarding of waste is made on time.	1.00	.595
There are skilled staff and trained personnel who manage the waste within the market.	1.00	.574
Adequate space is provided by the county government for the disposal of solid waste.	1.00	.641
There is a properly laid down infrastructure for the solid waste collection.	1.00	.639
There is a properly laid down infrastructure for the solid waste disposal.	1.00	.719
There are incentives offered to organizations that engage in material recovery.	1.00	.722
There are incentives offered to organizations that engage in the reuse of waste.	1.00	.711
There are incentives offered to organizations that engage in recycling.	1.00	.770

Total factor variance on Factors Affecting Solid Waste Management

The percentage of the overall variation that each component accounts for is shown in (Table 9). When a correlation matrix is utilized, eigenvalues, which are the variances of the factors, all have variances of one, and the sum of the variances is equal to the number of starting factors. The components in this investigation that had an Eigenvalue greater than 1.0 were chosen. The Eigenvalues are displayed in the first Eigenvalues row under the total column heading. Only 9 of the factors from the findings had eigenvalues greater than 1.0. The following composite factors were chosen through factor analysis: The presence of control and recycling mechanisms, the level of political leadership and township government support, public interest, the legal environment currently in place, the level of knowledge and awareness of waste management, the safety of the waste collectors, the prioritization and policy framework on disposal, the level of market vendors' cooperation, and finally the degree of political involvement.

Table 9 Total Factor Variances (Author's field survey)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.270	24.453	24.453	10.270	24.453	24.453	7.012	16.695	16.695
2	5.823	13.863	38.316	5.823	13.863	38.316	6.221	14.812	31.507

3	3.576	8.513	46.829	3.576	8.513	46.829	3.818	9.091	40.598
4	2.837	6.754	53.583	2.837	6.754	53.583	3.171	7.551	48.149
5	1.720	4.095	57.678	1.720	4.095	57.678	2.941	7.002	55.151
6	1.628	3.875	61.553	1.628	3.875	61.553	1.751	4.169	59.320
7	1.200	2.857	64.410	1.200	2.857	64.410	1.516	3.610	62.930
8	1.130	2.690	67.100	1.130	2.690	67.100	1.459	3.473	66.403
9	1.031	2.455	69.554	1.031	2.455	69.554	1.324	3.151	69.554
10	.959	2.283	71.838	-	-	-	-	-	-
11	.925	2.201	74.039	-	-	-	-	-	-
12	.899	2.140	76.179	-	-	-	-	-	-
13	.831	1.979	78.158	-	-	-	-	-	-
14	.722	1.719	79.877	-	-	-	-	-	-
15	.696	1.658	81.534	-	-	-	-	-	-
16	.659	1.570	83.104	-	-	-	-	-	-
17	.611	1.454	84.558	-	-	-	-	-	-
18	.576	1.371	85.929	-	-	-	-	-	-
19	.553	1.316	87.245	-	-	-	-	-	-
20	.490	1.166	88.411	-	-	-	-	-	-
21	.448	1.066	89.477	-	-	-	-	-	-
22	.407	.968	90.445	-	-	-	-	-	-
23	.401	.955	91.400	-	-	-	-	-	-
24	.352	.837	92.238	-	-	-	-	-	-
25	.334	.796	93.034	-	-	-	-	-	-
26	.320	.763	93.797	-	-	-	-	-	-
27	.299	.713	94.509	-	-	-	-	-	-
28	.269	.640	95.150	-	-	-	-	-	-
29	.250	.595	95.745	-	-	-	-	-	-
30	.217	.517	96.262	-	-	-	-	-	-
31	.208	.496	96.758	-	-	-	-	-	-
32	.202	.482	97.240	-	-	-	-	-	-
33	.190	.453	97.692	-	-	-	-	-	-
34	.171	.408	98.100	-	-	-	-	-	-
35	.153	.364	98.465	-	-	-	-	-	-
36	.135	.322	98.787	-	-	-	-	-	-
37	.116	.275	99.062	-	-	-	-	-	-
38	.108	.258	99.320	-	-	-	-	-	-
39	.095	.226	99.546	-	-	-	-	-	-
40	.073	.174	99.720	-	-	-	-	-	-
41	.063	.151	99.871	-	-	-	-	-	-
42	.054	.129	100.000	-	-	-	-	-	-
Extraction Method: Principal Component Analysis.									

Screen Plot of Factors Affecting Solid Waste Management

The eigenvalue is shown against the factor number on a screen. Figure 5 displays a screen plot of the factor analysis used in this investigation.
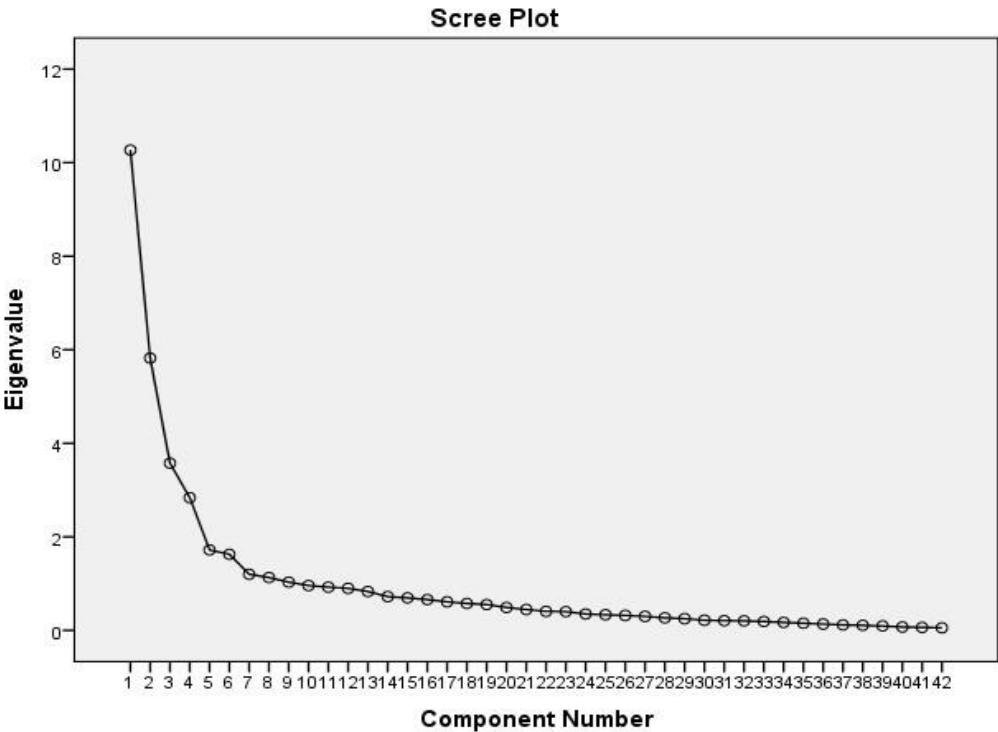
Figure 5 Screen Plot (Author's field survey)

The screen plot, as shown in Figure 5, consists of the first component, which had an Eigenvalue value of more than 10, the second element, which had an Eigenvalue of 5.0, and the remaining factors. Since each succeeding element accounts for a smaller percentage of the overall variance, the Eigenvalues decline across the plot. This demonstrates that only 9 composite elements could be derived from the 42 components, and as a result, only 9 major factors have an impact on the State Agency of Lagos's management of garbage.

Current Systems of Disposing of Solid Waste in Lagos State
The study's second goal was to examine the current methods for disposing of solid waste in the Lagos State Government. Running descriptive statistics on data gathered on the current solid waste generating and disposal systems allowed us to achieve this goal. The data and discussion in Table 10 provide more information on the solid waste disposal options as provided by the operational managers of the tested markets.

Table 10 Current systems of disposing of solid waste in Lagos State (Author's field survey)

	N	Mean	Std. Dev
Waste generation and storage systems			
The generation of waste within the market has an impact on the environment.	320	4.4444	1.02663
There are mechanisms used to manage waste generation.	320	3.7222	1.23314
Waste is generated from the market vendors only.	320	3.7222	1.59662
There are provisions of waste segregation at generation from source.	320	2.3889	1.31535
Household Level system			
Lagos State government encourages recycling of waste.	320	2.3714	1.37382
Lagos State government provides color-coded bags for segregating waste.	320	2.0857	1.4627
There are awareness programs conducted to encourage segregation, reuse, and recycling of waste.	320	2	1.37199

There are public-private partnerships to aid in waste recycling.	320	1.9429	1.18676
Collection and Transportation			
There are communal collection points within the market.	320	3.9714	1.56216
There are waste collection points within the market ideal/ strategically placed for everyone?	320	3.8286	1.48494
Market vendors pay an extra fee for waste management till the disposal site.	320	3.6286	1.49678
Generated waste is well covered before placing it at the communal collection points.	320	3.3143	1.64086
Waste disposal systems			
There is strict adherence to the disposal of waste at the approved sites.	320	3.5	1.29835
Service providers have adequate machinery & and disposal amenities for solid waste	320	3.0571	1.21129
There are adequate disposal sites for waste generated from the markets.	320	3.0556	1.06756
The informal waste pickers on the dumpsites are given some incentives.	320	3.0278	1.20679

The presence of public collection stations within the market received the highest rating (Mean = 4.0, SD = 1.6) and the lowest rating (Mean = 3.3, SD = 1.6) for collection and transportation. This demonstrates that community collection locations were widespread and that concealing garbage had only been used sparingly. The fact that both standard deviation values were more than 1.0 indicates that market sellers' answers to the two factors varied. The market vendors said that rigorous adherence to trash disposal was enforced to a considerable extent (Mean =3.5, SD=1.3), notwithstanding the lack of agreement among them, under the waste disposal system. Giving incentives to scavengers on dumpsites was the waste disposal component that was least implemented (Mean=3.0, SD=1.2). However, the standard deviation demonstrates that not all the market sellers agreed with it since some claimed it was prevalent in their markets to a significant degree as presented in (Table 11).

Table 11 Key On the current systems of disposing of wastes (Author's field survey)

	Waste generation and storage systems
1	The generation of waste within the market has an impact on the environment.
2	There are mechanisms used to manage waste generation.
3	Waste is generated from the market vendors only.
4	There are provisions of waste segregation at generation from source.
	Household level system
5	Lagos State government encourages recycling of waste.
6	Lagos State government provides color-coded bags for segregating waste.
7	Awareness programs conducted to encourage segregation, re-use, and recycling
8	There are public-private partnerships to aid in waste recycling.
	Collection and Transportation
9	There are communal collection points within the market.
10	Waste collection points within the market ideal/ strategically placed for everyone
11	Market vendors pay an extra fee for waste management till the disposal site.
12	Waste is well covered before placing it at the communal collection points.
	Waste disposal systems
13	There is strict adherence to the disposal of waste at the approved sites.
14	Service providers have adequate machinery & and disposal amenities for solid waste
15	There are adequate disposal sites for waste generated from the markets.
16	The informal waste pickers on the dumpsites are given some incentives.

The garbage generation and storage system were one of the systems examined. Figure 5's findings show that most managers (72%) emphasized the fact that waste creation influenced the environment, while just 3% said it had no impact. Additionally, many managers

(39%) reported that trash creation was managed by various means, with most of it coming from market sellers (53%). According to 36% of the managers surveyed, the storage system was not very appropriate since it lacked a mechanism for waste segregation. This demonstrates that market storage systems were underdeveloped despite effective waste-generation control methods. The market administrators said that there were community collecting locations in the market (66%), which is relevant to collection and transportation. In most of the marketplaces (57%), waste collection outlets were thoughtfully positioned in excellent locations from where they could be seen by everyone. According to 49% of the managers, the procedures were set up such that market sellers paid additional costs for trash management at the disposal sites.

Finally, most managers (43%) said that created garbage was thoroughly covered before being deposited at the common sites. However, 23% of the managers believed that this process was not carried out at all in other places, suggesting that the garbage was left exposed and causing environmental dangers. In most market areas (44%), the waste disposal systems in Lagos markets were characterized by tight adherence to the disposal of garbage at the permitted sites. Most of the service providers (51%) stated that the trash disposal systems provided suitable waste disposal locations, modest machinery, and disposal amenities for solid waste. To further promote garbage management, 50% of the managers said that informal waste pickers were occasionally given incentives, albeit this was less typical in certain market centers (11%). The findings demonstrate that garbage disposal systems had a reasonable amount of space, disposal locations, and moderate adherence to waste disposal.

Suggestions on how to improve the current system of waste disposal
The questionnaires were distributed to 3000 vendors, 9 members of the public, 6 NGO representatives, and 5 policymakers from the Lagos State government. After the questionnaires were filled out and analyzed. The representatives from all the above groups made recommendations for how to make the present trash disposal systems better. The outcomes are displayed in (Table 12).

Table 12 Suggestions on how to improve the current system of waste disposal (Author's field survey)

	N	Percent	Percent of Cases
Waste generation			
Selling waste (e.g., pigs)	15	39.5%	44.1%
Recycling/re-using waste	14	36.8%	41.2%
Skippers (metallic container bins)	6	15.8%	17.6%
Using crates for vegetables as dustbins	2	5.3%	5.9%
Individual vendor bin	1	2.6%	2.9%
Total	38	100.0%	111.8%
Household			
Individual vendors are to be given many bins.	10	23.3%	40.0%
Training	10	23.3%	40.0%
Daily waste clearing, collection	8	18.6%	32.0%
Recycling/re-using	7	16.3%	28.0%
Market cleaning days.	3	7.0%	12.0%
Color-coded bins	1	2.3%	4.0%
Have movable bins for waste storage before collection	1	2.3%	4.0%
Reselling waste	1	2.3%	4.0%
Start a recycling factory	1	2.3%	4.0%
Waste separation	1	2.3%	4.0%
Total	43	100.0%	172.0%
Collection and Transportation			
Covered tracks/bins to avoid spillage	13	36.1	43%
Individual bins to vendors.	5	13.9	17%
Add the number of tracks for transporting wastes	3	8.3	10%

Daily garbage collection	3	8.3	10%
Color-coded bins for separating waste	2	5.6	7%
Add dumpsites	1	2.8	3%
Lagos State government should mince waste	1	2.8	3%
Cover waste and then transport it	1	2.8	3%
Mechanize the process	1	2.8	3%
Total	30	83.4	100%
Waste disposal systems			
Recycling reusing waste	12	33.3	35%
Increase the number of dumping sites	6	16.7	18%
Selling waste	6	16.7	18%
Waste compression	4	11.1	12%
Many collection places	2	5.6	6%
By making good collection points like big waste bins	1	2.8	3%
Individual bins	1	2.8	3%
Training on waste management	1	2.8	3%
Waste segregation	1	2.8	3%
Total	34	94.6	100%

According to the findings, among other things, the generation of waste and control systems might be improved by selling waste, recycling, and reusing wastes that have metallic containers. The most popular waste management techniques at the home level were, among others: having separate containers for garbage collection, training, and collecting waste daily. Individual bins covered waste-movement tracks, more tracks, and daily garbage collection are all possible ways to improve the collection and transportation systems. Finally, with regards to trash disposal, the management advised, among other things, increasing collecting stations, expanding dumping sites, selling wastes, compressing wastes, and recycling.

Strategies of Solid Waste Management in Lagos State
The study's third goal concerned the methods employed in Lagos to control solid trash generation in Lagos markets (Table 13). Running descriptive statistics on data gathered on the current methods of managing solid waste in Lagos State allowed us to achieve this goal.

Table 13 Strategies of solid waste management in Lagos City (Author's field survey)

	N	Mean	Std. Dev
Integrated Solid waste management			
There are mechanisms provided for waste separation	320	2.3333	1.70783
There is public participation in the management of solid waste.	320	1.9697	1.28659
Modern methods of managing waste have been introduced.	320	1.8182	1.33357
Introduction of new technology in the management of solid waste.	320	1.6061	1.08799
Waste Management Treatment Approach			
A treatment approach is used for the waste generated.	320	2.8889	1.753
There are efforts by the county government to encourage the private sector in waste treatment	320	2.0833	1.42177
Training forums for the staff in the application of treatment approach.	320	1.9714	1.27154

Awareness forums for the staff in the application of treatment approach.	320	1.8056	1.26083
Public-Private Partnerships (PPP)			
Involvement of the county government with the private sector in the management of solid waste within the market.	320	3.6571	1.60775
Stakeholders of markets welcome PPP of solid waste management.	320	3.6286	1.66426
Community-based groups sensitization on the need to partner and work together on solid waste	320	2.7143	1.69031
Modern enforcements Standards			
Strict standards formulated for the management of waste	320	3.5278	1.53969
A clear regulatory framework is set for the management of SW	320	3.3611	1.29069
The national government gives support in policies and enforcement of waste management.	320	3.3056	1.32707
Efficient enforcement capacity for waste management in the market.	320	3.2857	1.42605
There are regular inspections and enforcement procedures followed.	320	2.9429	1.0556

Discussion of the Findings

To give conclusive reasons for conclusions, this part discusses the study's findings, makes a brief comparison with prior research, and interrogates the study's findings. The study identified seven key elements that affected the efficiency of solid waste management. The following explanation highlights the elements. According to the survey, there were no incentives for people who recycled, recovered materials, or even reused trash, nor had a recycling mindset or culture been fostered in the State markets. The survey also discovered ineffective and feeble attempts to reduce trash creation in municipal markets, including insufficient state government waste control laws, ineffective methods of enforcing waste management laws, and ineffective methods of disseminating information about waste management. The results support the assertions made that a lack of implementation and bad practices have caused towns and cities to become overrun by their trash, harming the environment and public health. The unfavorable status of solid waste management in the neighborhood was brought on by a subpar government strategy to deliver the required services.

According to this study, the state agency and other stakeholders' inadequate attitude to solid waste management was a contributing factor to the problem. The findings demonstrate that the state administration used a variety of solid waste disposal methods and systems. The state has policies in place to control garbage creation in the Lagos markets. The fact that garbage was mostly produced by market vendors in the marketplaces may have contributed to this. This is consistent with findings, which state that the bulk of garbage is produced in residential areas, markets, cities, towns, institutions, and industrial zones. Results on garbage transportation and collecting systems demonstrate that the system was reliable. According to the study, community collection stations were widely used, and they were placed in places where everyone could see them. Similar practices were used in Lahore, Pakistan, where garbage was collected again from community bins positioned about the city. The investigation also discovered that in most of the markets, market sellers paid additional costs to help with rubbish collection and transportation and discussed how the degree of income affected the collection of garbage.

Garbage collection was sporadic and ineffective, and service was only provided to high-exposure places, the wealthy, and companies prepared to pay. Finally, efforts had been made in many of the regions to guarantee that the wastes produced were thoroughly covered before they were picked up at the collection stations. Additionally, the service providers had quite acceptable equipment and facilities for disposing of solid waste. Additionally, the informal garbage pickers were provided incentives and the disposal locations were relatively suitable. This demonstrates that the municipal markets' trash disposal processes were not adequately implemented. The findings are consistent with, which found that few municipalities with authorized locations still engage in open dumping of mixed trash due to a lack of the necessary equipment and amenities for disposal. The report also emphasized how difficult it was to dispose of garbage in Nigeria because most of the state governments lacked suitable disposal facilities.

4. CONCLUSION AND RECOMMENDATIONS

The study finds that the systems and methods used to control waste generation and recycling, the township administration's and political leadership's level of support and involvement in waste management, the county and public's level of interest in waste management, the level of knowledge in waste management, the safety of waste collectors, and the policy framework in place all had an impact on waste management in Lagos markets. Political interferences and the market vendors' willingness to pay resources to manage trash in the markets also had an impact on the success of waste management. The report states that although trash creation and storage existed, there were no methods for easy waste separation. The location of the garbage assembly site and the collection costs were specified by the waste collection and transportation system that was in existence.

The home-level waste management mechanisms were least known and executed, whereas the trash disposal recommendations were adopted to a considerable extent. The study concludes that little had been done to encourage the use of the treatment method for waste management and that the markets in Lagos State studied had not completely implemented the integrated solid waste management systems. The public-private partnership approach to waste management was warmly accepted and appreciated, but only a small number of community-based organizations had been made aware of the necessity of such alliances. The research also observes that rules, regulations, and recommendations for waste management were only loosely enforced.

Based on the findings of this study, the following recommendations were made.

1. The study discovered that little had been done to inspire trash recyclers in the marketplaces as a method to support businesses that started recycling garbage. Likewise, insufficient and poor waste generation control systems thwarted efforts to manage waste. It is suggested that the state assess the current waste generation control mechanisms to close any gaps that might interfere with the efficacy of waste management in Lagos markets to manage waste in the township markets.

2. The country's and political leadership's concerns had an impact on how well trash was managed. According to the study's findings, the municipal authorities and political leadership did not care enough about or promote trash management. The study suggests that waste management be acknowledged as a significant aspect of concern impacting the public's and society's overall quality of life.

3. The study discovered that the degree to which waste was efficiently handled in the marketplaces depended on one's level of knowledge and awareness about waste management. According to the study, there were no official or informal waste management education programs or even awareness campaigns, and market sellers who produced significant amounts of rubbish in the markets of Lagos had little to no understanding and awareness of waste management. It is advised that public agencies start waste management training programs for market sellers through the Department of Environment to give them knowledge on garbage management.

4. According to the study, there were either minimal or no attempts made to improve home systems, which led to inadequate waste management at its root. This subpar waste management at the source resulted in subpar waste management during the subsequent garbage collection, transportation, and disposal operations. A home waste management system should be designed to guarantee that garbage is properly managed from the source to the final location of disposal to increase the efficacy of waste management. The study also suggests that to enhance garbage disposal, all rules outlined in the system should be strictly followed.

5. According to the study, the Lagos markets that were examined had not completely embraced an integrated solid waste management system that could include all factors and guarantee successful trash management. The report suggests that the city implement an intricate integrated waste management system that is comprehensive enough to factor in all elements that may have an impact on the management of waste in the State. It is also advised that the municipality of Lagos develop new waste management techniques and educate the public about them, such as the treatment strategy of waste management, to enhance waste management in the county markets.

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